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Montana Task Force
for Biomedical
Information
Report to the
Governor

Report to the Governor

Montana Task Force

BIOMEDICAL INFORMATION

Montana Task Force

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Report to the Governor

Montana Task Force

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CONTENTS

Introduction 1
Importance of Current Medical/Health Sciences Information 4
Developments In The Existing Infostructure
    National Developments 10
    Montana Developments 11
Deficiencies in Service, Access and Delivery Patterns 14
Models From Other States without Medical Schools . 17
Task Force Recommendations 18

Appendices

A - Potential Participating Entities 23
B - AHA Management Advisory 25
C - Bibliography 27

Introduction

The amount of new information in health care and the rate at which that information changes are increasing rapidly. New and efficient mechanisms are required to deliver relevant information at the time and to the place needed. Current medical knowledge is essential to high quality and cost effective health care as recent studies and local experience document. We must convert our libraries to more active instruments in disseminating health care information.

> *Stories of the impact of current medical knowledge on individual patient management are commonplace. One instance which has been widely reported in Montana involved a woman who attended a demonstration of computer access to the medical literature given by a medical librarian from Helena. The woman, who was diabetic, asked about treatments for chronic circulation problems in her foot. With the information obtained from the MEDLINE search, her local physician was able to investigate a new treatment option which was ultimately successful in correcting the problem. Prior to receiving the MEDLINE search, the recommendation was amputation of the foot.*

The point of this story is not so much that current information helped save the woman's foot, but that finding the pertinent information happened only by chance. The physician had exhausted his normal, conscientiously pursued, avenues but the system did not provide easy access to a comprehensive search of latest findings.

President Bill Clinton's recent economic summit illustrates growing national emphasis on building information infrastructure as well as on reforming health care delivery systems and costs. Montana has little coordination of the existing components of its own information infrastructure and no comprehensive plan or vision for its future development and direction.

The Montana State Library, the Montana Area Health Education Center and the National Network of Libraries of Medicine (NN/LM) share a goal to improve Montanan's access to current medical and health care knowledge. These organizations served as financial and coordinating sponsors of the Montana Task Force for Biomedical Information.

The mission of the Task Force was to:

> *"assess the need for a designated coordinating agency, organization or institution with the responsibility for fostering the development of health information services statewide and to serve as the link between Montana's health care community and the National Library of Medicine's biomedical communications network."*

Members were health care professionals representing clinical practice, public health, education, library and administrative perspectives. They were given a year to complete their task.

The objectives of the Task Force were to:

1. Review the development of health information service patterns since the end of federal funding for the Montana Health Sciences Information Network in 1983;

2. Identify current deficiencies in service, access, and delivery patterns;

3. Make recommendations for the further development of health sciences information services statewide;

4. Foster implementation of the Task Force Recommendations.

The Task Force was appointed by Governor Stan Stephens in February of 1992 and met in Helena on April 13 and August 19. This report was reviewed and approved by conference call on February 2, 1993. A steering committee of Helena-based members coordinated activities in the interim periods.

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Importance of Current Medical/Health Sciences Information

National developments impact Montana's health care providers and emphasize the importance of the published literature to both quality of care and costs of that care.

√ *A.* Scientifically designed studies document improved quality and reduced costs when information provided by the hospital library is applied to patient care.

√ *B.* In addition to enhancing the quality of care, searching the literature before treatment is a useful, strategic move in avoiding malpractice litigation.

√ *C.* New accreditation standards for hospitals require "knowledge based" information resources.

√ *D.* Lifelong learning is essential to the maintenance of continuing professional expertise as well as to licensing and certification requirements.

√ *E.* Health care consumers are demanding more information.

A. Scientifically designed studies document improved quality and reduced costs when information provided by the hospital library is applied to patient care.

In Rochester, NY, 448 physicians from 15 participating hospitals were asked to report results from a request for information on a current clinical case. In the study, literature provided by the hospital library service affected decisions regarding patient care in 80% of cases.

Decisions which changed after reviewing current literature included: diagnosis, choice of tests, choice of therapy, choice of drugs, and advice given to the patient.

The physicians participating in the study reported changes in patient care management which also affected costs. The cost impact was evident in the following percentage of cases:

Additional tests/procedures avoided	***49%***
Hospital admissions avoided	***11%***
Surgical procedures avoided	***21%***
Reduced length of hospital stay	***19%***

(Marshall 1991)

B. Searching the literature before treatment is a useful, strategic move in avoiding malpractice litigation.

Physicians are being held responsible for searching the current literature to seek, find, and apply the latest medical information when treating patients. Harbeson vs. Parke Davis 746 F. 2d 517 (9th Cir. 1984) found that even though a particular complication was not mentioned in the standard medical textbooks, the physician had the obligation to search the journal literature. Legally, care must conform to the accepted standard of care whether that care is delivered in Montana or Massachusetts.

The cost implication of malpractice suits avoided are critical in today's litigious health care environment.

In Flathead County, a recent suit was brought against the County, the Mental Health Center, the attending physician and the local hospital by a patient's family. The jury trial lasted more than two months and exonerated the defendants on all charges. During the court proceedings, the jury heard testimony that patient treatment was based in part on careful, repeated reviews of the MEDLINE database for current medication and treatment protocols.

Attorneys for the defense also highlighted access to current health care information as a component of the physician's expertise and as an element in the development of hospital policies and procedures.

An article in the January 1993 MMA Bulletin reports estimates that the cost of practice changes made in response to professional liability risks, often termed "defensive medicine", amounted to $15.1 billion nationally in 1989.

Using current authoritative literature is inexpensive defensive medicine.

As documented in the Rochester study, use of current authoritative literature may allow the physician to avoid unnecessary tests or procedures.

C. Accreditation standards for hospitals require "knowledge based" information resources.

The Joint Committee on Accreditation of Healthcare Organizations (JCAHO) is revising its standards for 1994 and will require hospitals to provide access to authoritative and up-to-date print and non-print information resources in a timely and efficient manner.

These "knowledge-based" information services are to "relate to the needs of the medical and nursing staffs, administrators, managers and other health professional staff, other staff of the organization, students, patients and their families, and researchers ... supporting clinical and management decision making, quality improvement processes, continuing education of staff, patient, and families, education, and research." (JCAHO Proposed Information Management Chapter/1994 Standards for the Accreditation of Hospitals)

Access to the literature is another key component of the TQM/CQI process.

Total Quality Management (TQM) and Continuous Quality Improvement (CQI) are being implemented in health care organizations because of JCAHO's Agenda for Change requiring TQM/CQI programs in accredited hospitals by 1994. When used in the health care setting, TQM and CQI use reported experience, consensus and practice standards as yardsticks.

An article in the January 5, 1993 issue of "Hospitals" noted one hospital's use of CQI to reduce infection rates. Hospital practice on antibiotic administration was made consistent with recent clinical research. A similar approach is also in place in Montana.

Ken Eden M.D, Chief of Staff at St. Peter's Hospital in Helena, was instrumental in changing how physicians complete their peer review process. Topics for review are established by physicians. The librarian prepares a literature search and forwards it, together with selected articles, to a physician for review. The physician reviewer compares hospital charts to published guidelines, then presents an overview and report of the hospital's experience to the medical staff.

The total process of managing a given diagnosis is looked at critically to determine if there is room for improvement. Dr. Eden reports that this "topic presentation" approach to peer review has resulted in better discussion and more requests for information. Some recommended changes have been implemented and improvements documented.

D. Lifelong learning is essential to the maintenance of continuing professional expertise as well as to licensing and certification requirements.

It has been estimated that to keep up with the healthcare literature one would have to read 6,000 articles a day! (Lundberg, G.)

The American Medical Association (AMA) is reviewing methods of providing effective continuing education so that the results of medical research are more quickly applied to clinical practice. Extensive discussions appear in JAMA, Journal of the American Medical Association during 1992. Growing emphasis is placed on literature-based information tailored to individual clinical practice needs and on the use of electronic technology. (Manning, 1992)

The 1990 Management Advisory, "Information Management: Library and Information Service" put out by the American Hospital Association, advises that "Hospital library services play an important role in the continuing education and development of hospital staff and, as such, are a major asset in the recruitment and retention of physicians and other health care professionals." (Appendix B)

The majority of direct patient care is provided by nurses, whose purpose is to improve the level of health and functioning of patient/clients. Their ability to do that is influenced by how easily they can access recent information and research findings to apply to their practice. Mechanisms to remain competent in the face of advancing knowledge, techniques, and methodologies must be in place even in the most isolated of our communities.

An example of changing nursing information needs was a long-standing debate observed in a nursing home over whether to change a particular (new) dressing daily, as in past practice, or bi-weekly. Easy access to authoritative literature could have helped resolve the issue when it first arose and prevented any adverse outcome for patients.

The Medical Library Association has recognized the need of its profession to adapt to the new demands of information technology and resources. An educational program, "Platform for Change" has been implemented to address identified components of the required professional knowledge base.

The Academy of Health Information Professionals (AHIP) has been formed to certify medical library information service providers.

The knowledge base of the medical librarian can be compared to that of a health care provider. Consider that the librarian's "patient" is the information need of the practitioner.

The medical librarian must analyze the question (diagnosis), evaluate and select appropriate resource(s), identify the pertinent information (treatment) from that resource, and deliver it by the most timely and effective route. The librarian must manage the service and resources efficiently and develop networks which facilitate the delivery.

The medical librarian has the education and experience to:

- understand the health care environment in which the information is needed and will be applied;
- understand health sciences terminology, procedures and practices;
- be familiar with a full range of information, text, journal, media, electronic, and telecommunications network resources; and
- be competent in utilizing the resources both effectively and efficiently.

Donald Lindberg M.D., Director of the National Library of Medicine, frequently states that given a choice between having a library or having a librarian, he'd always choose to have a librarian. "They know where to go for the information."

E. Health care consumers are demanding more information.

A Study of Interlibrary Loan Activities in Montana (1988), which reviewed all types of libraries, established that health sciences information was the subject area most heavily requested by Montanans. Public and hospital libraries are attempting to meet this increased demand for health information despite decreased budgets and resources.

> *Basically, patients wish to know what is wrong, what it is called, whether it is serious enough to require expensive professional care, what alternative treatments exist, and how they can cope... In the hospital setting, libraries are called upon to provide information in support of patient education programs related to specific illnesses, diagnostic procedures, and treatment methods. (Rees 1993)*

A recently completed study by the Montana State University College of Nursing, The Montana Family Cancer Project, studied the needs of families living in a rural state managing cancer in their homes. Informational needs related to dealing with the problems faced by those with cancer and their care providers was the second most frequently self-identified area of concern.

Informed health care consumers are participating in health care policy discussions in order to effect reform.

> *The most promising approach to the present health care crisis lies in educating consumers to improve their self care practices and reduce health risk factors...It bears repeating that educated, well-informed, and empowered consumers can do more for improving the health of the U.S. populace than a massive investment in buildings and expensive medical technology. (Rees 1993)*

Developments in Existing Infostructure Affecting Health Professionals

National Developments

Telecommunications, electronic library resources and networks are a major national focus and are expanding rapidly.

The National Library of Medicine (NLM) has developed state-of-the-art databases and access to biomedical literature. As a part of its mission, it extends access to these databases to isolated, rural care practitioners who have computers with modems. Through outreach and training efforts, medical librarians teach practitioners to access the literature using their GRATEFUL MED software and ordering articles electronically from health sciences libraries.

The High Performance Computing and Communications (HPCC) Act provides funding for the National Research and Education Network (NREN) and places emphasis on non-academic institutions including hospitals. NREN will have the capability of transmitting information, graphics, and images such as x-rays to anyone with access to a computer and modem. The capability for electronic mail, conferencing, bulletin boards, and specialized computer resources will be expanded to global information networks. Don Lindberg M.D., Director of NLM, will also serve as the first Director of the National Coordination Office for HPCC.

The Rural Electrification Administration (REA) has a mandate to fund rural economic development programs. The Distance Learning and Medical Link Grant Program "provides grants to encourage and improve the use of telecommunications, computer networks, and related advanced technologies to provide educational and medical benefits to people living in rural areas." Ten million dollars has recently become available for projects.

Both Montana Senators have taken an active interest in telecommunications for health care. Senator Baucus sponsored a conference entitled "The Role of Technology in Delivering Rural Health Care: The Montana Challenge" in 1991. Senator Burns convened a symposium entitled "Information Age Technologies and Montana Economic Development" in 1990. Senator Burns also joined then-Senator Albert Gore in sponsoring SB 1200, the bill which emphasizes extending NREN to health care and libraries.

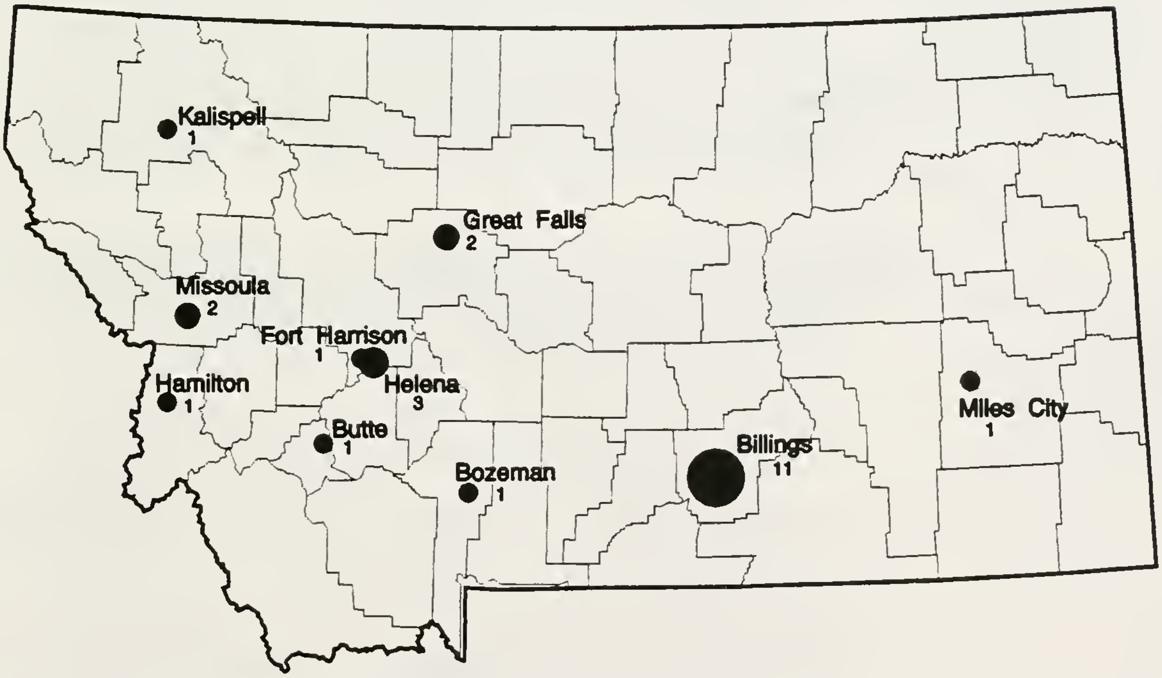
MONTANA DEVELOPMENTS

❶ Ten hospitals in seven communities have professionally staffed libraries with good journal and text collections. These resources are included in local, regional and national catalogs (i.e. WLN's Lasercat) and databases (NLM's SERHOLD) to provide access for health professionals across the state.

Additional professional health sciences library resources exist in medical clinics, academic institutions, and the federal research laboratory in Hamilton. These libraries use sophisticated online and/or CD-ROM based electronic databases for locating current health sciences information for their clientele.

❷ Twenty five libraries in ten Montana communities participate in the National Network of Libraries of Medicine (NLM) DOCLINE system for the electronic routing of requests for journal articles. TELEFAX transmission of information is routine.

LIBRARIES LINKED VIA DOCLINE



❸ Seventeen specialized health sciences libraries have included their books and journals in the WLN database in order to share their resources with Montana's public, academic, and school libraries. These libraries are small, but have unique specialized materials.

Montana recognizes the value of resource sharing and provides reimbursement to libraries for the loans they make to each other.

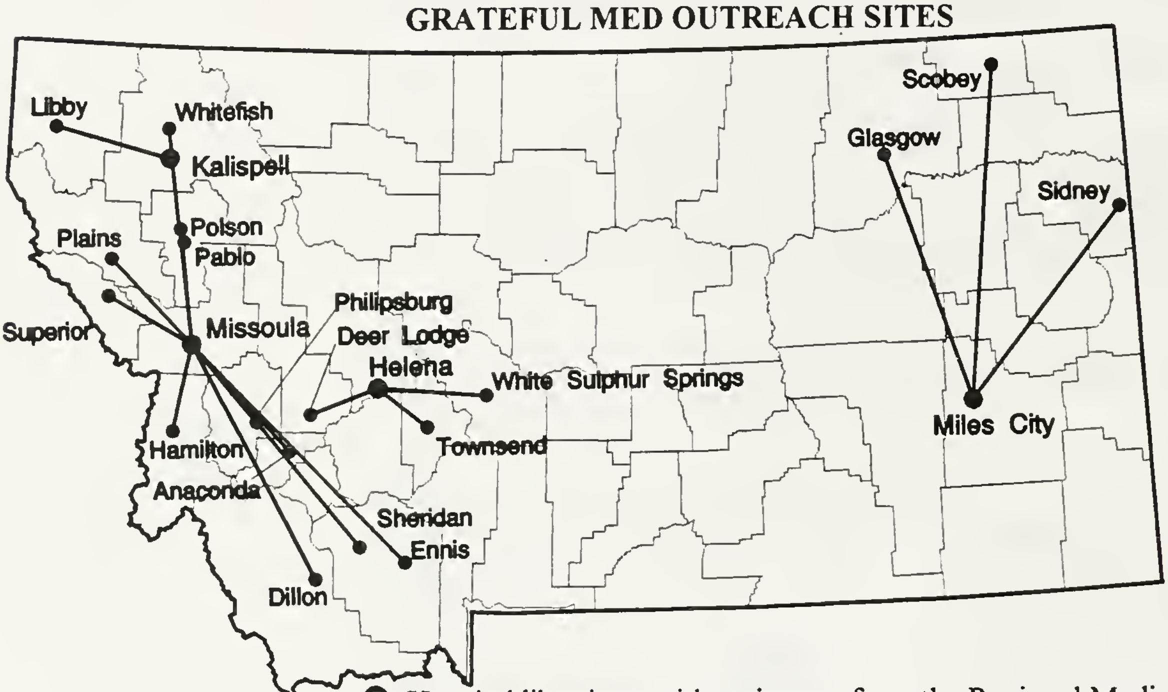
Hospitals have extended services to health professionals in neighboring areas.

❹ NLM grants have funded GRATEFUL MED Outreach Projects at the following institutions:

- Kalispell Regional Hospital
- Shodair Hospital, Helena
- St. Patrick Hospital, Missoula
- VA Medical Center, Miles City

These projects have provided computer equipment, training and ongoing support for 20 smaller Montana hospitals to access current information electronically.

GRATEFUL MED OUTREACH SITES



NLM grants have funded special projects to improve the technological capabilities of health sciences libraries.

❺ Hospital librarians, with assistance from the Regional Medical Library at the University of Washington Health Sciences Library, have obtained funding for:

- The Billings Area Health Sciences Information Consortium (BAHSIC) to acquire computer equipment, modems, and telefax machines for 14 libraries. Training in the use of NLM databases through GRATEFUL MED and in teaching others to use the software was also provided.
- The PILOT CONNECTIONS project, headquartered at the Regional Medical Library, will link 2 hospitals and the Montana AHEC to NREN and the global Internet. These will be the first Montana health-related institutions to be connected; the project will evaluate feasibility and value of Internet connections for small hospitals.

❻ The regional medical library has extended outreach services and GRATEFUL MED training to health care providers and medical librarians in multiple visits to Montana over several years. Their TELEProj outreach demonstration project during 1988 to 1991 was so successful that it became a model mandated by the National Library of Medicine for other regions of the nation. In 1992 their RML librarian made four trips to the state, visiting 12 sites and reaching 142 persons.

❼ The MTAHEC has developed HEALTHCON, a computer bulletin board system linking Montana health professionals using computers, modems, and standard telephone lines. HEALTHCON has received over 10,500 calls from more than 350 persons and now averages 20 calls per day. It is used by the Montana Department of Health and Environmental Sciences to link the administrators of county Public Health offices, by the Montana Women Infant and Children nutrition program offices and by the Montana Consortium for Excellence in Health Care.

In addition to electronic mail, HEALTHCON currently offers health related news and information, continuing education courses, and medical librarian services. As it evolves into the VIRTUAL MEDICAL CENTER, it plans to offer clinical consulting services as well as on-line access to CD-ROM versions of medical texts, journals, databases and clinical decision support programs. Another priority is to develop image transmission capabilities to be used for teleradiology and telepathology consultation as well as for professional continuing education.

❽ The Montana Department of Health & Environmental Sciences is planning to develop a Montana Cooperative Center for Health Information which will collect, analyze and disseminate health statistics for use by health policymakers. The Virtual Medical Center is being considered as a possible telecommunications network to collect and disseminate this information.

❾ New opportunities for professional preparation at the master's level for library & information science are now available in Montana through a distance-learning project from the University of Arizona. Two persons currently employed in health sciences libraries are pursuing their Master degree through this mechanism. The only other accredited program in this region requires two years resident study at the University of Washington in Seattle.

Deficiencies in Service, Access and Delivery Patterns

Most states have a medical school which is a natural focus for leadership in providing information services and outreach. From 1980 to 1983, the Renne Library at Montana State University played this role under the auspices of a federal grant. As the economic situation in the state worsened and its own resources began to shrink, Renne Library determined it had to close out its leadership and coordinating activities in 1985.

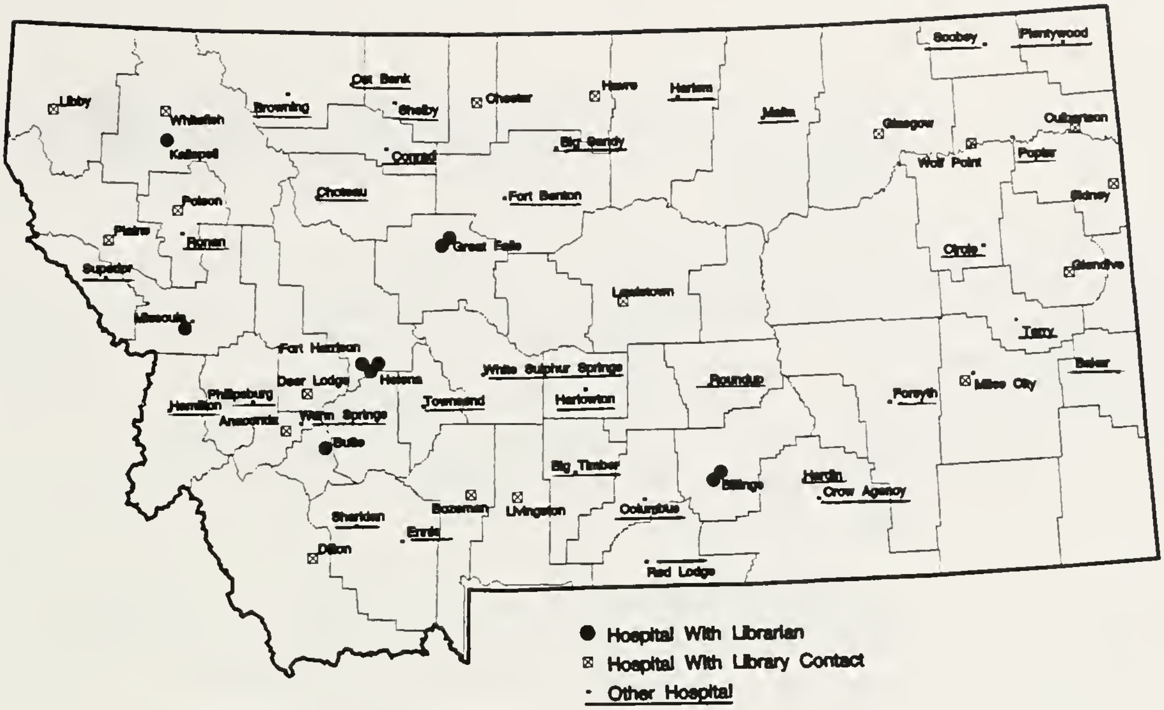
Since then, members of the Health Sciences Libraries Interest Group of the Montana Library Association and the Library Advisory Committee of the Montana AHEC have given considerable voluntary effort to work with the Regional Medical Library and to nurture continued development of information access and delivery.

The greatest gap created by a lack of statewide coordination is lack of leadership or the ability to plan direction and growth of information services.

Without a central coordinating entity, services have tended to be reactive, since no individual or agency takes responsibility for monitoring developments and the larger picture. Multiple agencies with common purposes of information dissemination have had no highly visible focal point within the state with which to coordinate activities.

Information resources are unevenly distributed, concentrated in the state's population centers.

Fourteen of the twenty-five libraries which use the DOCLINE network are in Billings as are ten of the seventeen health sciences libraries in WLN. Thirty five of the state's hospitals do not have a library or link to MEDLARS or the NLM. Thirty five of the state's hospitals do not have a library or link to MEDLARS or the NN/LM.



DISTRIBUTION OF LIBRARIES IN HOSPITALS

The 1989 Montana AHEC study indicates 35% of Montana's physicians have no affiliation with professional library service despite a traditional emphasis on developing service to this group. A nurse in Missoula has several good options for obtaining health information while a nurse in Malta has none.

Some groups of health professionals are better served than others.

A majority of the state's nurses, pharmacists, physical therapists and mental health professionals lack affiliation with a health sciences library. To access information requires great initiative and they often experience unacceptable delays in delivery.

The growing expense of health care texts and journals makes it difficult for small health care facilities, agencies, and individuals to maintain current resources.

The 72% rise in medical journal subscription rates over the past 5 years provides an incentive to avoid the unnecessary duplication of resources. Many libraries are suffering from lack of adequate funding necessitating cuts in staff and materials budgets. The university collections which form a backbone of resources for the state have been severely affected.

Access to information requires investment in technology, systems development and human expertise.

Skilled individuals are required to make efficient use of information technology and maximize local and remote library resources.

Lack of utilization of current information resources is not only a problem of access, technology, or training. Many do not have the time to use it.

Experience in Montana and nationally reports that few physicians or other health professionals have the time to do their own literature searching even if they have the equipment and inclination.

A great deal of ongoing support is needed to maintain effective use of the technology set in place by outreach grants.

Human resources with the professional expertise to provide pertinent and comprehensive information services must be conveniently available. A Helena family physician who is very computer literate and who has taken training in searching MEDLINE was very emphatic in stating:

> *..it's still faster and easier to call (the medical librarian) and take a couple of minutes to explain what I need than it is to go the computer, figure out the medical subject headings, go online, try to sort out the retrieval, etc. I'd rather have (the medical librarian) get the information for me and spend my time digesting it and figuring out what to do for the patient. The only time I do my own searching is at night or on the weekend, when the librarian isn't available.*

Training in specialized aspects of medical librarianship is not offered frequently in Montana.

Comprehensive MEDLINE training is being offered in July 1993 at Montana State University for the first time in several years. An accredited medical library continuing education course is sometimes presented at the Montana Library Association annual conference. More opportunities for developing and maintaining this specialized expertise need to be available.

Multiple opportunities for grants exist.

Not all health care facilities currently have the combination of awareness, expertise and time necessary to pursue them.

Models from other states without medical schools

Most states have medical schools with libraries that have outreach missions and naturally attract information inquiries from alumni and other health professionals in the state.

It is worthwhile to look at models of information service in those states, like Montana, without a medical school. In each of them services have evolved in response to unique geographic, demographic and funding factors. In each, however, there has emerged a principal institution for health information services.

ALASKA: Health information services are clearly centralized at the University of Alaska, Anchorage. Health Sciences Information Services (HSIS) provides service to any health professional in the state. Recently a fee structure was developed and subscriptions were offered to hospitals, organizations and individuals. There is heavy reliance on state-of-the-art telecommunication systems.

DELAWARE: The Delaware Academy of Medicine offers membership and traditional information services to physicians, dentists, allied health professionals and corporations. It has an active outreach program and offers full services to institutions with its fee-based Circuit Riding Medical Librarian Program.

IDAHO: A Health Information Consultant funded by the Idaho State Library provides training, promotes technology and supports efforts of local libraries. The Idaho State Library is both a depository for materials and a source of Library Services & Construction Act funding for innovative and cooperative projects.

MAINE: A resource library, the VA Medical Center, offers backup service throughout the state and will serve any professional. Local librarians have formed the Health Sciences Library and Information (HSLIC) which supports outreach efforts.

WYOMING: The Health Sciences Information Network (HSIN) bases a medical librarian at the University of Wyoming to provide traditional services and consultation with institutions developing local libraries. Initially supported by the School of Pharmacy and the University Libraries, a fee structure has recently been imposed.

Task Force Recommendations

The Task Force recommends that the Governor adopt the following goal:

Develop a health sciences infostructure which effectively links Montana health care professionals with pertinent information resources and services which can support each of the following needs:

- Clinical decision making,
- Continuing professional education,
- Administrative planning and management,
- Patient, family and consumer education,
- Research,
- Continuous quality improvement, and
- Health services planning.

RECOMMENDATIONS

Establish an advisory council for healthcare information which will serve as the lead entity to ensure communication and cooperation among appropriate components of the infostructure.

The council will hire a coordinating staff and develop a program to:

√ *A.* Promote network development, in all of its hardware, organizational and human aspects, linking key resources with consumers of health sciences information;

√ *B.* Coordinate interagency efforts in the use and development of needed information resources networks in order to minimize duplication and to foster maximum utilization;

√ *C.* Develop roles and specific activities for each participating entity so that all aspects of information needs identified in the goal statement are addressed effectively by relevant components of the infostructure;

√ *D.* Ensure that national technology and computer networks are effectively applied to health sciences information delivery to Montana's health care and library community;

√ *E.* Develop the human resource which can provide services, training and substantial ongoing support to users.

IMPLEMENTATION

❶ Convene and fund a meeting of public and private stakeholders to plan for the creation of an advisory council for health sciences information.

❷ Lend executive support to organizational efforts.

❸ Designate liaisons from within the Cabinet and from state agencies with interest in health care information, health professions education, health services planning, and telecommunications.

❹ Consider the Montana State Library as the agency of residence for the Council Coordinator.

❺ Identify existing expenditures within state government for healthcare information and education in order to assess where coordination and cooperation could produce increased service effectiveness and/or cost efficiencies.

❻ Identify existing and developing publicly-funded infostructure components, such as MuseNet and MetNet, which may be useful to the broad distribution of health sciences information.

❼ Investigate developing incentives for using the services, such as insurance reimbursement and/or continuing education credits for literature searches and research conducted for patient care.

❽ Lend resources to investigate and develop funding opportunities for a coordinating staff and other components of a coordinated effort. These may include:

- demonstration grant proposals,
- legislation,
- ongoing institutional support for the Council Coordinator,
- interagency agreements, public/private contracts and subscription arrangements.

ROLE OF COORDINATOR

The role of the coordinator and staff will be to develop a health sciences infostructure which will eventually link every health care professional with timely, pertinent and authoritative information resources and services delivered to the place and in the format required by the client.

Appropriate activities may include but not be limited to:

A. Promote network development....

Establish links among existing and developing networks and systems within Montana, such as the Virtual Medical Center, Telemedicine, MuseNet, MetNet, The Montana Cooperative Center for Health Information, Reference Point, etc.

Liaison with the National Network of Libraries of Medicine/Pacific Northwest Regional and other relevant regional or national networks.

Increase participation by hospitals and other appropriate health care agencies in the National Network of Libraries of Medicine.

Support participation by health sciences libraries in appropriate networks and systems such as Serhold, Docline, WLN, MuseNet, MetNet, etc.

B. Coordinate interagency efforts ...

Conduct statewide needs assessments; assist in the evaluation and development of in-state health care information resources.

Promote maintenance, expansion, and accessibility of university and other publicly funded health sciences book journal, media and electronic database collections.

Lead efforts in cooperative collection development to avoid unnecessary duplication and strengthen deficiencies.

Promote resource sharing arrangements and participation in the state's interlibrary loan reimbursement program.

Consult and advise entities which are developing library and information services.

Assist and advise in obtaining grant funding.

C. Develop roles and specific activities for each participating entity....

Identify appropriate resources and systems which can address information needs relevant to patient care, continuing professional education, continuous quality improvement, health services planning, research, and consumer education.

Work with a practitioner, educator, and licensor in each health profession to design a program for literature-based, practice-focused continuing professional education.

D. Ensure that national technology and computer networks are effectively applied....

Monitor developments in the High Performance Computing & Communications Act and the National Research and Education Network for application to Montana health sciences information delivery needs.

E. Develop the human resources to provide services, training and support to users ....

Assist unaffiliated/unserved health professionals to obtain access to health sciences information.

Provide evaluation, training, and support in the utilization of new information technologies.

Provide back-up reference service and expertise in locating specialized resources and in searching remote databases.

Publicize and market information services intensively to assure maximum appropriate use.

Appendix A

Participating Entities May Include, But Are Not Limited To:

Information Service Providers

Montana State Library
Montana Area Health Education Center
Health Sciences Libraries Interest Group
Montana Library Association
Health Sciences Library Consortia
Montana Library Federations
National Network/Libraries of Medicine
Pacific Northwest Region
Appropriate state agency libraries

State Agencies

Department of Administration
Department of Health & Environmental Sciences
Department of Higher Education
Department of Corrections & Human Services
Department of Social & Rehabilitation Services
Department of Commerce

Licensing Boards

MT/WY Foundation for Medical Care
Medical/Legal Panel
Montana Cooperative Center for Health Information (proposed)
State Healthcare Authority (proposed)

State Health Professional Associations

Montana Hospital Association
Montana Medical Association
Montana Nurses Association

Federal Agencies

Indian Health Service
US Public Health Service

Health Profession Education Providers

University system units
Community colleges
Vo-Tech centers
Private colleges

Insurers

Blue Cross/Blue Shield

Health Related Private Associations

American Cancer Society
American Lung Association
March of Dimes

MANAGEMENT
ADVISORY

INFORMATION
MANAGEMENT

Library and Information Services

The importance of library services to the hospital lies in the ability to cost-effectively identify information needs and provide timely access to relevant information in a useful format. Hospital library services provide access to information to meet the needs of all hospital personnel and often patients, their families, and community members as well. By addressing diverse information needs throughout the organization, library services affect patient care outcomes and contribute actively to the achievement of the hospital's mission. The strength and value of hospital library services reside in its trained information professionals, or librarians, who identify and meet information needs. The Joint Commission on Accreditation of Healthcare Organizations' standard for professional library services requires that "the hospital provides library services that meet the informational, educational, and, when appropriate, research-related needs of the medical and hospital staffs."[1]

Value of Hospital Library Services

Patient Care

Hospital library services play a significant role in the provision of high-quality patient care by providing physicians, nurses, and others with relevant clinical information for complex decision making. Computerized literature searches are an important diagnostic tool for physicians and may be an effective alternative to costly diagnostic tests.[2] Physicians and hospitals have been sued successfully for negligence because comprehensive literature searches were not performed prior to treatment.[3] Studies have shown that physicians believe information obtained through the library contributes to high-quality care for their patients.[4]

Research

Hospital library services are a key resource for research activities. Medical research begins and ends in the library and relies on comprehensive literature reviews and the ability to retrieve new information quickly. Research protocols, especially those requiring animal research, may need validation by examination of previous studies. In addition to supporting the research process, hospital library services are vital in identifying sources of grant support and information for proposal preparation.

Management Decisions

Library services provide hospital management staff with information critical for decision making and ongoing management from the health care administration literature and from business, technology, information systems, and any other relevant literature. Hospital managers use information provided through library services to formulate decisions in marketing, purchasing, and organizational restructuring. The library can contribute to the effective management of the hospital's expense budget by coordinating all book, periodical, audiovisual, and software purchases requested by staff.

Continuing Education and Professsional Development

Hospital library services play an important role in the continuing education and development of hospital staff and, as such, are a major asset in the recruitment and retention of physicians and other health care professionals. Continuing education and staff development keep hospital staffs at the cutting edge of their fields and are an important employee benefit. The library is a focal point for identifying, acquiring, and disseminating continuing education materials in a variety of formats. Library staff use their teaching and information skills to help hospital staff in areas such as database searching, personal file and reprint management, and computer literacy. They can also play a role in developing and implementing literacy programs.

Patient and Consumer Information

The library is well positioned to provide patient and consumer information. Library staff can be active partners in the hospital's patient education program by drawing

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members of the community into wellness programs through the provision of information and materials that are directed to a nontechnical audience. This activity serves as a patient bonding technique.

Providing Hospital Library Services

Role

Today's information handling and retrieval technologies make access to an almost infinite volume of information both cost effective and fast. Remote access to information contained in databases available through database vendors and bibliographic utilities, electronic mail, and telefacsimile bring a world of information to the hospital staff through its library services. The identification of need, analysis, and selection of appropriate sources, regardless of location, and timely delivery of information are key library services. In addition, libraries acquire, organize, and make available on-site materials in a variety of formats, including books, periodicals, microformats, audiovisuals, three-dimensional models, diskettes, CD-ROM, and magnetic tape.

Criteria

The American Hospital Association recognizes that the information needs of hospitals vary. Hospitals differ in the communities they serve, in the services they offer, and in their needs for information delivery. Hospital library services are as diverse as the hospitals of which they are a part. In determining the best approach to the provision of hospital library services, hospitals should consider the following:

- Current and future information needs
- Current and potential user population
- Proximity to and quality of other information services
- Cost effectiveness of alternative approaches
- Relevant standards and guidelines for services

Staffing

To ensure that the type and level of services provided best meet the hospital's needs, hospital library services should be directed by a qualified manager. Because hospitals vary in size, as well as their teaching and research missions, the staffing of hospital libraries varies. Staffing alternatives range from multiple information professionals with commensurate support staff to shared professional staff who can bring information services to several hospitals. Hospitals in a consortium or health care system may have centralized library and information services with communication facilitated by telefacsimile and electronic mail. These same types of services may be purchased on contract from other hospitals or other institutions with well-established programs or from a qualified individual.

Services

Services provided by hospital library professionals include provision of access to information relevant to the library's user population and the acquisition, organization, and control of selected materials available on-site. Today, no library can expect to meet all of its users' needs with resources on-site. Therefore, electronic links to various databases such as MEDLINE and the Health Planning and Administration database (HEALTH) and links through networks such as the Regional Medical Library (RML) Network to other libraries and information providers that can supply information not in the collection are critical to effective service provision.

Summary

The ability of health care providers to secure, evaluate, and apply information is an important measurement of both clinical and organizational performance. Library services are important information access and management resources for hospitals in patient care, research, administrative decision support, education, and patient and consumer information. The library professional is the key to the cost-effective access to and utilization of these resources. Hospitals today are using a number of approaches to enable them to provide an appro-priate level of service that best fits with their mission and environment.

Resources

The following publications and organizations may be helpful to hospitals seeking to evaluate, develop, or extend their library services.

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